



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,542	07/07/2003	Shiwen Chen	9432-000238	9097

27572 7590 12/03/2004

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

ARTHUR JEANGLAUDE, GERTRUDE

ART UNIT PAPER NUMBER

2144

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/614,542

Applicant(s)

CHEN, SHIWEN

Examiner

Gertrude Arthur-Jeanglaude

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 13, 16, 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hedge (U.S. Patent No. 6,570,875).

As to claim 1, Hedge discloses a method for routing data packets in a packet-switched network, comprising: receiving a data packet (incoming data packets; see abstract)) at a network routing device residing in the network, the data packet being formulated in accordance with the Internet Protocol (IP) and having at least one IP address (considered as private) embedded in an options field of the packet header (See col. 5, lines 31-37); Hedge further discloses extracting the at least one private IP address from the options field (See col. 9, lines 44-49); and also discloses formatting a destination IP address field of the packet header with the at least one private IP address prior to forwarding the data packet (See col.11, lines 20-34).

As to claim 13, Hedge discloses a method for routing data packets in a packet-switched network, comprising: receiving a data packet (incoming data packets; see

Art Unit: 2144

abstract) transmitted by an originating network device at a network routing device residing in the network, the data packet being formulated in accordance with the Internet Protocol (IP) and having one original source IP address (considered as private IP address) in a source IP address field of the packet header (See col. 5, lines 31-37); and inherently a destination IP address in a destination IP address field of the packet header; Hedge further discloses formatting an options field of the packet header with the original source private IP address; and formatting the source IP address field of the packet header with an IP address for the network routing device prior to forwarding the data packet (See col. 8, lines 32-64; col. 9, lines 44-49; col. 11, lines 20-34).

As to claim 16, Hedge discloses receiving the data packet at a network device having an IP address that matches the destination IP address embedded in the destination IP address field (See col. 8, lines 19-57); and extracting the original source IP address (considered as private address) from the options field and the IP address for the network routing device from the source IP address field of the packet header for subsequent communications with the originating network device (See col. 9, lines 44-49).

As to claims 20, 22, Hedge discloses a packet header of a data packet formulated in accordance with the Internet Protocol, the data packet embodied in a carrier wave, comprising an IP address for an originating network device embedded in an options field of the packet header (See col. 8, lines 50-64).

As to claims 21, 23 Hedge discloses the packet header comprises an embedded address indicator residing in the options field of the packet header, the embedded

address indicator indicative of the presence of the IP address in the options field (See col. 8, lines 32-64).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-12, 19, 24-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Stai et al. (U.S. Patent No. 6,401,128).

As to claim 9, Stai et al. disclose a network communication system and routing device positioned between a private network and a public network in a packet-switched network system, the network routing device adapted to receive data packets at a public-side interface, the data packets being formulated in accordance with Internet Protocol (IP) and having at least one private IP address embedded in a destination address options field of the packet header, the network routing device being operable to extract the at least one private IP address from the destination address options field and format a destination IP address field of the packet header with the at least one private IP address (See col. 2, lines 26-66).

As to claim 10, Stai et al. disclose that the network routing device being further operable to format the destination IP address field when an IP address residing in the destination IP address of the packet header matches a public-side interface IP

address for the network routing device (See col. 2, lines 30-42).

As to claim 11, Stai et al. disclose the network routing device being further operable to reformat the destination address options field after extracting the at least one private IP address from the options field (by evaluating the destination address) (See col. 2, lines 49-61).

As to claim 12, Stai et al. disclose the network routing device wherein the data packet includes two or more private IP addresses appended to each other in a predefined order within the options field of the packet header (See Fig.2).

As to claim 19, Stai et al. disclose a network routing device positioned between a private network and a public network in a packet-switched network system, the network routing private-side interface, the data device adapted to receive data packets at a private side interface, the data packets being formulated in accordance with Internet Protocol (IP) and having an original source private IP address in a source destination IP address field of the packet header, the network routing device being operable to format an options field of the packet header with the original source private IP address and format the source IP address field of the packet header with a public interface IP address for the network routing device prior to forwarding the data packet (See col. 2, lines 26-66).

As to claim 24, Stai et al. disclose a traversable addressing scheme (network communication system) that uniquely identifies a network device residing in a private network and having at least one network routing device interposed between the network device and a public network, comprising concatenating an IP address for the network

Art Unit: 2144

device in a predefined order with a public side interface IP address for the at least one network routing device to form a traversable network address (See col. 2, lines 26-66).

As to claim 25, Stai et al. disclose the traversable addressing scheme comprises formatting an options field of a IP packet header with the traversable network address (See col. 5, lines 15-33).

As to claim 26, Stai et al. disclose the traversable addressing scheme wherein the public side interface IP address for the at least one network routing device is appended to the IP address for a source network device (col. 2, lines 26-66).

As to claim 27, Stai et al. disclose the traversable addressing scheme wherein the public side interface IP address for the at least one network routing device is prepended to the IP address for a destination network device (col. 2, lines 26-66).

As to claim 28, Stai et al. disclose the traversable addressing scheme further comprises registering the traversable network address of the network device with a domain name server (See col. 5, lines 23-32).

As to claim 29, Stai et al. disclose the traversable addressing scheme further comprises determining the traversable network address of the network device by accessing the domain name server (See col. 5, lines 23-32).

As to claim 30, Stai et al. disclose repeating the process at each network routing device interposed between the originating network device and a public network (See col. 5, lines 65-67-col.6, lines 1-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-8, 14-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedge (U.S. Patent No. 6,570,875) in view of Stai et al. (U.S. Patent No. 6,401,128).

As to claims 2-3, 14-15, Hedge discloses all but fails to specifically disclose the step of receiving a data packet further comprises receiving the data packet at a public-side interface of the network routing device and forwarding the data packet through a private-side interface of the network routing device. In an analogous art, Stai et al. discloses a system and method for sending and receiving frames between a public device and a private device wherein it discloses a public side interface and a private side interface of the network routing device (See col. 2, lines 26-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hedge with the network interface of Stai et al. by having a private and a public side interface in order to better direct communications.

As to claims 4-5, Hedge discloses the IP address in the options field and formatting the destination IP address (See col. lines) but fails to specifically disclose that the embedded address indicator which indicates the presence of the at least one private

IP address and formatting the destination IP address field when an IP address residing in the destination IP address of the packet header matches a public-side interface IP address for the network routing device. In an analogous art Stai et al. disclose a system and method for sending and receiving frames between a public device and a private device wherein it discloses a public side interface and a private side interface of the network routing device (See col. 2, lines 26-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hedge with the network interface of Stai et al. by having a private and a public side interface in order to better direct communications.

As to claim 6, Hedge discloses reformatting (when packet is not addressed; see col. 10, lines 50-65) the options field to remove the at least IP address but fails to specifically disclose remove the at least one private IP address. In an analogous art, Stai et al. disclose remove (by replacing) the at least one private IP address (See col. 2, lines 49-66). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hedge with the network interface of Stai et al. by removing the at least private IP address to better direct communications.

As to claims 7-8, Hedge discloses the data packets but fails to specifically disclose two or more private IP addresses appended to each other in a predefined order within the options field of the packet header; nor does it disclose that each network routing device interposed between a public network and a destination network device. In an analogous art Stai et al. disclose a system and method for sending and receiving frames between a public device and a private device wherein it discloses two or more

private IP addresses (See Fig.2) appended to each other in a predefined order within the options field of the packet header; and that each network routing device interposed between a public network and a destination network device a public side interface and a private side interface of the network routing device (See col. 2, lines 26-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hedge with the network interface of Stai et al. by having two or more private IP addresses and network routing device interposed between a public network and a destination network device in order to better direct communications.

As to claim 17, Hedge discloses all but fail to specifically disclose receiving the data packet at a another network routing device having a private-side interface IP address; appending the IP address for the network routing device to the original source private IP address in the options field of the packet header; and formatting the source IP address field of the packet header with a public interface IP address for the another network routing device prior to forwarding the data packet. In an analogous art, Stai et al. disclose a system and method for sending and receiving frames between a public device and a private device wherein it discloses a public side interface and a private side interface of the network routing device (See col. 2, lines 26-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hedge with the network interface of Stai et al. by receiving the data packet at a another network routing device having a private-side interface IP address; appending the IP address for the network routing device to the original source private IP address in the options field of the packet header; and formatting the source IP address field of the

Art Unit: 2144

packet header with a public interface IP address for the another network routing device prior to forwarding the data packet in order to better direct communications.

As to claim 18, Hedge discloses receiving the data packet at a destination network device having an IP address that matches the destination IP address embedded in the destination IP address field; and extracting the original source private IP address and the IP address for the network routing device from the options field and the IP address for the another network routing device from the source IP address field of the packet header for subsequent communications with the originating network device (See col. 8, lines 19-57; col. 9, lines 44-49).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mattaway (US Pub 2004/0172588)

Mathur (U.S. 6308220)

Mitchell (US Pub 2004/0095944)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gertrude Arthur-Jeanglaude whose telephone number is (571) 272-6954. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on (571) 272-3925. The fax phone

Art Unit: 2144

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GAJ

GAJ

November 17, 2004

Gertrude A. Jeanglaude
GERTRUDE A. JEANGLAUE
PRIMARY EXAMINER